



University of Groningen

## Netvliesfunctie en praeclampsie. Een onderzoek naar fusie frequentie.

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## SUMMARY

In this thesis the clinical value is verified of a new method of toxemia examination during pregnancy.

This is done by determining the so-called Flicker Fusion Threshold before and after administering a special dose of medicine, having a spasmolytic effect on the small arterioles. We gave nitroglycerine sublingual, 0,5 mg each time. By determining the fusion frequency again every two minutes we get a series of values which are in direct relation to the spasmodic contraction of the wall of the arteriole.

This fusion frequency is a phenomenon already mentioned in the literature of ophthalmics for nearly a century.

In the historical survey chapter I this point is treated more in detail, this being imperative for a proper insight in this matter and a clear conception on the part of non-ophthalmologists.

Similarly in chapter II of the historical survey the development of the apparatus and its methodology are dealt with to throw a light on the technical difficulties and to demonstrate how and why we have come to the construction of our special apparatus.

In chapter III is explained how and in the cases of which complaints the flicker fusion test may be applied as a diagnostic expedient with a fair chance of success.

It was the publication of H.M. BRILL and his co-workers in 1951 that appealed to us and has given rise to the present research, the object of which has been stated in the exordium.

Prior to passing on to the research proper a further elucidation of what is understood by toxemia of pregnancy proved to be required. Therefore in chapter IV an epitome is given of the present-day notions of preeclampsia and vasoconstriction, while in chapter V the clinical picture of toxemia of pregnancy is concisely dealt with and schematically outlined for a conveniently arranged synopsis.

In chapter VI the present-day notions regarding the relation between definite diseases of the retina and pregnancy intoxication are briefly mentioned. This was necessary as besides the flicker fusion test we always made the routine retina and refraction examination as well, wherever such was possible.

Private research work is started in chapter VII, in which are set forth the requirements the apparatus in general is to come up to, and in which a description is given of the apparatus used by ourselves.

In chapter VIII the methodology and in chapter IX the technique are dealt with both yielding quite satisfactory results.



Chapter X is devoted to statistics, a factor which has been practically ignored in the literature relative to this branch of science. Of an approximate number of 1500 flicker frequency determinations the borderline values were calculated for which with a 95 percent certainty it may be assumed that we are dealing with a case of pathological spasm of the wall of the small arterioles.

In chapter XI the results of the flicker test and the retina and refraction examinations are dealt with of a group of 55 patients, representing normal cases of pregnancy and sufficiently diverging in age, gravidity duration and gravidity frequency. The results and clinical data are schematically represented at the end of the chapter.

In chapter XII are similarly treated the results obtained with a group of 31 patients, showing obvious clinical pictures of toxemia of pregnancy. The clinical and laboratory data, however, were too numerous to be reproduced schematically so that abridged statements had to be referred to the end of the chapter.

The results obtained in the two preceding chapters proved to be in agreement with the theories developed. In chapter XIII we pass on to the vital part of our research, viz. the results of the flicker test with patients whose clinical picture shows doubtful symptoms of toxemia of pregnancy.

It appears that the frequencies of the positive flicker test results increase with the seriousness of the syndrome.

In the case of exclusively anamnestic complaints or of exclusive complaints about an abnormal increase of weight by far the majority of patients show a negative flicker test result. With patients exclusively troubled by oedema approximately 50 percent of the cases are negative. With all other symptoms or combinations of symptoms the flicker test is only exceptionally negative.

In chapter XIV the research work is ended with some conclusions and suggestions.